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BEFORE
THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA
DOCKET NO. 2021-88-E

IN RE: Dominion Energy South Carolina, Incorporated's 2021 Avoided Cost Proceeding Pursuant to S.C. Code Ann. § 58-41-20(A)	)))))	**PROPOSED ORDER OF THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF**

This matter comes before the Public Service Commission of South Carolina ("the Commission") pursuant to the requirements in S.C. Code Ann. § 58-41-20(A), which was enacted in 2019 as part of the South Carolina Energy Freedom Act ("Act 62").[1] Pursuant to S.C. Code Ann. § 58-41-20(A):

> As soon as is practicable after the effective date of this chapter, the commission shall open a docket for the purpose of establishing each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary to implement this section. Within six months after the effective date of this chapter, and at least once every twenty-four months thereafter, the commission shall approve each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell foms, and any other terms or conditions necessary to implement this section. Within such proceeding the commission shall approve one or more standard form power purchase agreements for use for qualifying small power production facilities not eligible for the standard offer. Such power purchase agreements shall contain provisions, including, but not limited to, provisions for force majeure, indemnification, choice of venue, and confidentiality provisions and other such terms, but shall not be determinative of price or length of the power purchase agreement. The commission may approve multiple form power purchase agreements to accommodate various generation technologies and other project-specific characteristics.

[1] South Carolina Energy Freedom Act, H. 3659, 123rd Legislative Session (2019 S.C. Act 62).

Dominion Energy South Carolina, Inc.'s ("DESC" or the "Company") current standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and other appropriate terms and conditions were approved by the Commission in Order No. 2019-847, dated December 9, 2019, and Order No. 2020-244, dated March 24, 2020, issued in Docket No. 2019-184-E, which was the first proceeding conducted under section 58-41-20(A).

PROCEDURAL HISTORY

On March 10, 2021, the Commission opened this docket through Directive Order No. 2021-166 which set a deadline of April 22, 2021, for DESC to file its Application, along with other procedural deadlines. DESC, on April 22, 2021, filed its Application to Approve and Establish Pursuant to S.C. Code Ann § 58-41-20(A) the Standard Offer, Avoided Cost Methodologies, Form Contract Power Purchase Agreements, Commitment to Sell Forms, and All other Appropriate Terms and Conditions ("Application").

Johnson Development Associates, Inc. ("Johnson Development" or "JDA") filed a petition to intervene on April 5, 2021. The South Carolina Department of Consumer Affairs ("Consumer Advocate" or "DCA") filed a petition to intervene on April 14, 2021. The Carolinas Clean Energy Business Association ("CCEBA") filed a petition to intervene on April 20, 2021. Pine Gate Renewables, LLC ("Pine Gate") filed a petition to intervene on May 25, 2021. The South Carolina Coastal Conservation League and Southern Alliance for Clean Energy ("SACE/CCL") filed a petition to intervene on May 28, 2021. The Commission granted all petitions to intervene.[2] The South Carolina Office of Regulatory Staff ("ORS") is a party by statute.

The DCA, on May 12, 2021, filed a Motion for Commission to Review the Sufficiency of DESC's Application. SACE/CCL and CCEBA filed letters in support of the DCA's Motion. The

[2] *See* Order Nos. 2021-46H, 2021-51H, 2021-57H, 2021-73H, and 2021-75H.

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Commission granted the DCA's Motion by Directive Order No. 2021-384 dated May 26, 2021, which directed DESC to file an Amended Application by June 7, 2021. DESC filed its Amended Application on that date and a Second Amended Application on June 25, 2021.

On June 29, 2021, DESC filed the Direct Testimony and Exhibit(s) of witnesses James W. Neely, Allen W. Rooks, John E. Folsom, Jr., and Peter B. David and the Direct Testimony of Daniel F. Kassis and Eric H. Bell.[3]

CCEBA, on July 7, 2021, moved for an extension of time for intervenors to file direct testimony and for the Commission to accelerate the deadline by which DESC must respond to CCEBA's discovery requests. Alternatively, CCEBA requested that supplemental direct testimony be permitted and that the remaining testimony deadlines be amended. SACE/CCL filed a letter in support of CCEBA's motion. The Commission issued Hearing Officer Directive Order No. 2021-96-H on July 12, 2021, holding the July 13, 2021 deadline for all other parties and ORS to prefile direct testimony in abeyance until such time as the full Commission can rule on the CCEBA's motion. CCEBA, on July 16, 2021, filed a Motion for Extension of Time and Motion to Continue Hearing to which various parties agreed to consent or not oppose. CCEBA also filed a Notice of Withdrawal of its July 7, 2021 motion for extension of time. ORS filed letter a letter on July 20, 2021, setting forth its position regarding CCEBA's Motion for Extension of Time and Motion to Continue Hearing. The Commission, on July 21, 2021, issued Directive Order No. 2021-504 setting new deadlines for ORS/intervenor prefiled direct testimony, rebuttal testimony, and surrebuttal testimony and denying the Motion to Continue Hearing.

On July 27, 2021, ORS filed the Direct Testimony and Exhibit of Brian Horii[4] and Direct Testimony of O'Neil O. Morgan; SACE/CCL filed the Direct Testimony and Exhibits of Kenneth

[3] On August 23, 2021, DESC filed the Corrected Direct Testimony and Exhibits of Peter B. David.
[4] ORS filed the Revised Direct Testimony and Exhibit of Brian Horii on August 23, 2021.

Sercy and CCEBA filed the Direct Testimony and Exhibits of Ed Burgess and Direct Testimony of Steven J. Levitas[5]. No other intervenors filed testimony. On August 10, 2021, DESC filed the Rebuttal Testimony of Eric H. Bell, Peter B. David, John E. Folsom, Jr., Daniel F. Kassis, James W. Neely, Thomas E. Hanzlik, and Allen W. Rooks.[6] Witness Folsom and Witness Rooks included revised exhibits with their Rebuttal Testimony.[7] On August 16, 2021, ORS filed the Surrebuttal Testimony of Brian Horii; SACE/CCL filed the Surrebuttal Testimony and Exhibit of Kenneth Sercy;[8] and CCEBA filed the Surrebuttal Testimony of Ed Burgess and Surrebuttal Testimony and Exhibit of Steven J. Levitas.

S.C. Code Ann. § 58-4-20(I) authorizes the Commission to retain a third-party consultant to evaluate avoided cost rates, methodologies, terms, calculations, and conditions and states the Commission "shall engage, for each utility, a qualified independent third party to submit a report that includes the third party's independently derived conclusions as to that third party's opinion of each utility's calculation of avoided costs for purposes of proceedings conducted pursuant to this section." The Commission issued a Request for Proposal for consulting services on April 19, 2021 and received one proposal in response. The offeror subsequently requested to withdraw from consideration, and the Commission granted the request. The Commission issued another request for proposal on May 24, 2021, and a third request for proposal on June 16, 2021.[9] Four consultants responded to the proposal. The Commission set deadlines for parties and Commissioners to submit questions for the candidates, conducted public interviews of the candidates, set a deadline for

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[5] On November 2, 2021, CCEBA filed a corrected version of the Direct Testimony of Ed Burgess.
[6] DESC filed, on August 23, 2021, the Corrected Rebuttal Testimony of Peter B. David.
[7] DESC filed, on August 23, 2021, the following corrected exhibits to the Rebuttal Testimony of Allen W. Rooks: Corrected Revised Exhibit No. __(Corrected Revised AWR-1); Corrected Revised Exhibit No. __(Corrected Revised AWR-2); Corrected Revised Exhibit No. __(Corrected Revised AWR-5); and Corrected Revised Exhibit No. __(Corrected Revised AWR-6).
[8] SACE/CCL filed the Corrected Surrebuttal Testimony of Kenneth Sercy on August 23, 2021.
[9] The third request for proposal was amended on June 28, 2021.

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parties to submit feedback to the public interviews, and set a deadline for final written conflicts check letters from the candidates. *See* Directive Order No. 2021-488. The Commission ultimately retained London Economics International, LLC ("LEI") and issued a scope of work and procedural dates, including a due date of September 16, 2021, for LEI's report, a deadline of October 5, 2021, for parties to conduct discovery, and a hearing starting on October 6, 2021, for LEI's testimony and cross examination followed by Commissioner questions. *See* Directive Order No. 2021-520. The Commission subsequently amended the schedule to allow parties to submit responsive testimony to the LEI report by October 8, 2021 and rescheduled the hearing to start on October 11, 2021. *See* Directive Order No. 2021-565.

An evidentiary merits hearing was held virtually from August 18, 2021, through August 25, 2021, at which the prefiled direct, rebuttal, and surrebuttal testimony of witnesses for DESC, ORS, CCEBA, and SACE/CCL was presented. During the hearing, the Commission Chairman granted a motion of CCEBA for additional cross examination of DESC Witness David for leave to file supplemental surrebuttal testimony of CCEBA Witness Burgess in response to revisions Witness David made from the stand to his prefiled rebuttal testimony.

LEI filed its report on September 17, 2021, and a corrected report on September 22, 2021.

CCEBA filed the Supplemental, Surrebuttal Testimony of Ed Burgess on October 5, 2021. On October 8, 2021, DESC filed the Responsive Testimony of Eric H. Bell, Peter B. David, John E. Folsom, Jr., Daniel F. Kassis, and James W. Neely; CCEBA filed the Responsive Testimony and Exhibit of Ed Burgess; and SACE/CCL filed responsive testimony from Kenneth Sercy.

The Commission held a hearing on October 11, 2021 through October 13, 2021 at which additional cross examination of DESC Witness David was heard, the Commission heard the Supplemental Surrebuttal Testimony of CCEBA Witness Burgess, LEI presented its report and

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answered questions from the parties and the Commission, and the responsive testimony of DESC and intervenor witnesses to LEI's report was presented.

STATUTORY STANDARDS AND REQUIRED FINDINGS

Act 62 pertains to a range of issues related to the expansion of renewable energy generation and utility resource planning, and it provides this Commission with both increased direction and discretion in determining the most appropriate path forward for energy development in South Carolina. Under Act 62, the Commission "is directed to address all renewable energy issues in a fair and balanced manner, considering the costs and benefits to all customers of all programs and tariffs that relate to renewable energy and energy storage, both as part of the utility's power system and as direct investments by customers for their own energy needs and renewable goals." S.C. Code Ann. § 58-41-05. "The commission also is directed to ensure that the revenue recovery, cost allocation, and rate design of utilities that it regulates are just and reasonable and properly reflect changes in the industry as a whole, the benefits of customer renewable energy, energy efficiency, and demand response, as well as any utility or state-specific impacts unique to South Carolina which are brought about by the consequences of this act." *Id.*

Specifically, with respect to avoided cost, S.C. Code Ann. § 58-41-20(A) instructs that "any decisions by the commission shall be just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA and the FERC's implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public." Small power producers are to be treated "on a fair and equal footing with electrical utility-owned resources by ensuring that:

> (1) rates for the purchase of energy and capacity fully and accurately reflect the electrical utility's avoided costs;

> (2) power purchase agreements, including terms and conditions, are commercially reasonable and consistent with regulations and orders promulgated by the Federal Energy Regulatory Commission implementing PURPA; and
> (3) each electrical utility's avoided cost methodology fairly accounts for costs avoided by the electrical utility or incurred by the electrical utility, including, but not limited to, energy, capacity, and ancillary services provided by or consumed by small power producers including those utilizing energy storage equipment. Avoided cost methodologies approved by the commission may account for differences in costs avoided based on the geographic location and resource type of a small power producer's qualifying small power production facility.

S.C. Code Ann. § 58-41-20(B). Additionally, Act 62 requires that:

> No costs or expenses incurred nor any payments made by the electric utility in compliance or in accordance with this act must be included in the electrical utility's rates or otherwise borne by the general body of South Carolina retail customers of the electrical utility without an affirmative finding supported by the preponderance of evidence of record and conclusion in a written order by the Public Service Commission that such expense, cost or payment was reasonable and prudent and made in the best interest of the electrical utility's general body of customers.

2019 S.C. Act 62, § 16.

The Commission's Findings of Fact and Conclusions below reflect and apply the required statutory standards.

REVIEW OF THE EVIDENCE, FINDINGS OF FACT, AND CONCLUSIONS

1. Avoided Energy Costs

DESC Position

DESC uses the Difference in Revenue Requirements ("DRR") to calculate both the energy and capacity components of its avoided costs. This is the same methodology approved by the Commission in DESC's last avoided costs proceeding. (Neely Direct p. 6). The DRR approach follows directly from PURPA's definition of avoided costs in that it involves calculating the revenue requirements between a base case and a change case. *Id.* The base case is defined by DESC's existing and future fleet of generators and the hourly load profile to be served by these generators, as well as the solar facilities with which DESC has executed a power purchase

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agreement. *Id.* The change case is the same as the base case except that a zero-cost purchase transaction modeled after the appropriate 100 MW energy profile is assumed. *Id.*

For the avoided energy cost determination, the Company uses a constructed computer program called PLEXOS, which models the commitment and dispatch of generating units to serve load hour-by-hour. *Id.* PLEXOS makes two runs—the base case and the change case—and estimates the production costs and benefits resulting from the purchase transaction. *Id.* The base and change cases are identical except for the zero-cost purchase transaction. *Id.* The avoided energy cost is the difference between the base case costs and the change case costs. *Id.*

For the Standard Offer Rate DESC calculated avoided energy costs for a 10-year timeframe (2022-2031) and levelized those avoided costs for the first and the second half of the period (years 2022-2026 and 2027-2031). (Horii Revised Direct p. 15). For the solar Standard Offer rate, DESC uses a single rate for each of the 5-year timeframes within the 10-year period. *Id.* pp. 15-16. For the non-solar Standard Offer rate, DESC proposes eleven time of use ("TOU") periods, compared to four TOU periods in the current Standard Offer tariffs. *Id.* p. 16. DESC identifies May – September ("Summer"), December through February ("Winter") and a third season with the remaining months of March, April, October and November ("Shoulder"). *Id.* Within these seasons, DESC proposes three TOU periods in the Summer, and four in the Shoulder and the Winter seasons. *Id.* The peak periods for the Summer and Shoulder seasons are from 5:00 pm to 11:00 pm, while in the Winter season, DESC estimates the highest avoided energy costs to occur in the morning, from 5:00 am to 9:00 am. This Winter level is only slightly lower than that of the Summer's highest price. *Id.*

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For the PR-1 Rate available to small power producers and cogenerators at or below 100 kilowatts ("kW"), DESC calculated avoided energy costs for one year, May 2021 to April 2022. *Id.* p. 11. The PR-1 rate provides different energy credits for non-solar and solar generators. *Id.*

For the non-solar qualifying facilities ("QFs"), DESC proposes to continue using two seasons, summer and non-summer, but with a modification to the summer season to include the month of May (season starts in May and ends in September). *Id.* The non-summer season includes all other months. *Id.* pp. 11-12. Within the summer season, DESC retains two time of day periods, with a slightly modified on-peak period that continues to be twelve hours long but starts and ends an hour later (11:00 am to 11:00 pm). *Id.* p. 12. The non-summer season also continues to have two TOU periods, but DESC proposes to exclude late morning and early afternoon hours from the peak period so that peak hours only include 5:00 am through 9:00 am (as opposed to 6:00 am to 1:00 pm) and 5:00 pm to 11:00 pm (as opposed to 5:00 pm to 10:00 pm). *Id.*

For the PR-1 solar-specific rate, DESC proposes to eliminate any time of day differentiation and seasonality. *Id.* DESC proposes to use a single, flat per- kilowatt hour ("kWh") energy credit. *Id.* This flat energy credit reflects the result of the DRR analysis. *Id.* The credit is the total annual DRR cost savings from a solar generator, divided by the annual output of that generator.

In response to ORS Witness Horii's recommended alteration to one of the four PR-1 non-solar time periods, DESC testified in rebuttal that while it believes its calculations regarding the time periods are reasonable and prudent, it does not oppose Witness Horii's recommendations. (Bell Rebuttal p. 20). DESC opposed in rebuttal the recommendations made by the intervenors regarding avoided energy costs.

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SACE/CCL Position

SACE/CCL Witness Sercy testified that DESC's avoided energy rate proposals fail to accurately reflect DESC's avoided costs. (Sercy Direct p. 17). Witness Sercy asserted DESC did not use reasonable natural gas price assumptions in its proposal. *Id.* p. 7. More specifically, Witness Sercy disagreed with DESC's utilization of natural gas forecasts based on three years of NYMEX natural gas futures prices which are thereafter subject to an escalation factor thereafter based on EIA AEO reference case gas price forecasts. *Id.* He asserted DESC's approach results in an unreasonably low gas price forecast and recommended that DESC be required to use the blended forecast using the most recent AEO Reference case prices with the exception of the first two years. (Sercy Direct pp. 7-9). According to Witness Sercy, the blended rate is both more accurate and consistent with DESC's IRP natural gas price forecasting. *Id.* Regarding DESC's load forecast, Witness Sercy testified that on average, the megawatt-hour sales forecast used to calculate the avoided energy and peak demand were below the forecast in the Company's Modified IRP approved by the Commission. (Sercy Direct p. 9).

Witness Sercy also testified that the Company's proposed pricing periods were not adequately supported because not sufficiently verifiable. (Sercy Direct p. 10). According to Witness Sercy, the heat map provided by DESC Witness Bell did not appear to be prepared under an appropriate methodology and was not accompanied by the hourly data needed to verify the hourly marginal price projections used to create the heat map. (Sercy Direct pp. 11-12, 17).

Witness Sercy further recommended that standalone solar QF's be granted eligibility for the technology-neutral rates. (Sercy Direct, pp. 13-14, 17).

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ORS Position

ORS Witness Horii reviewed the Company's methodology and calculations for avoided energy rates. Witness Horii testified that "DESC applied the approved DRR methodology to calculate avoided energy costs in a manner consistent with past filings of avoided energy rates." (Horii Revised Direct p. 17, ll. 5-6). ORS, through Witness Horii, recommended the Commission approve DESC's proposed avoided energy costs for the following rates: PR-1 for solar; Standard Offer for solar; and Standard Offer for non-solar. *Id.* p. 19, l. 6.

Witness Horii recommended a modification to the four TOU periods for non-solar generators on the PR-1 Rate to provide a more focused period to "provide even greater incentives for generators to provide power when it is most valuable to DESC and its retail customers." *Id.* p. 13. DESC's proposal has a 11:00 am to 11:00 pm peak period, but a review of DESC's 2022 hourly energy marginal costs shows that the average summer marginal costs between 11:00 am and 2:00 pm are significantly lower than the average costs for the other peak hours. *Id.* As a result, ORS recommends shifting the summer hours of 11:00 am to 2:00 pm from the summer peak period to the summer off-peak period. *Id.* This shift "increases the average summer peak marginal cost and increases the accuracy of the TOU averages by 3% over the entire year." *Id.* Witness Horii's recommendation for TOU Energy credits for non-solar PR-1 generators are illustrated in Table 1 of his Direct Testimony (provided below), calculated using ORS's recommended TOU periods and the DESC methodology and assumptions that incorporate the additional costs and adjustments for working capital, generation tax, gross receipts and losses. *Id.* p. 20.

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Table 1: PR-1 Non-Solar Energy Credit ($/kWh)

Non-Summer: Jan-Mar & Oct-Dec		Summer: May-Sep	
5am-9am, 5pm-11pm	9am-5pm, 11pm-5am	2pm-11pm	11pm-2pm
0.03437	0.02805	0.03608	0.02875

Witness Horii agreed with DESC's proposal of a single energy credit for all output from solar generators under the PR-1 rate. *Id.* p. 13. While the value provided by solar generation varies across the time of day and season, those variations are captured and averaged over the entirety of solar output in setting the solar specific single energy credit. *Id.*

The single energy credit for solar also helps avoid the overcompensation error that could arise from the use of TOU average rates. *Id.* p. 14, l. 7 - p. 15, l. 16. While in an economist's ideal world, energy credits would vary hourly to match the Company's marginal energy costs and to provide the most precise price signals, it is common to set prices in the industry based on four to six TOU periods to aid customer understanding of rates. *Id.* Because costs and generation do vary, TOU prices may over or under compensate customers in real-time. *Id.* If the variations in costs and/or generation are random, then the over and under compensation would tend to balance out over the year. *Id.* However, in the case of solar generation, these variations are not random *Id.* Witness Horii performed an analysis to quantify the overcompensation, which showed that using average energy credits by the four current TOU periods would overcompensate solar generators by 9% relative to what a typical generator would receive using hourly avoided energy cost credits. *Id.* The DESC proposal to use a single solar-specific energy credit for the PR-1 solar energy credit and the Standard Offer solar energy credit solves the TOU overcompensation because it specifically estimates the annual value of solar generation through the DRR process and divides that value by the annual solar output. *Id.*

Witness Horii did not recommend changes to DESC proposed standard offer tariff TOU periods for non-solar generator. *Id.* pp. 15-16. Witness Horii testified the "TOU periods for the Standard Offer rate for non-solar are reasonable, and the higher granularity will help incentivize generators to export energy in hours of highest value to DESC." (Horii Direct p.16, ll. 15-17). Likewise, Witness Horii did not recommend changes to DESC'S proposed single energy credit for solar generators on the standard offer rate. According to Witness Horii, as with the PR-1 energy rate for solar generators, it is reasonable for the Standard Offer rate for solar generators to not have TOU periods since the solar Standard Offer avoided energy cost is specific to the DRR solar QF analysis. (Horii Direct p. 16, ll. 20-22).

LEI Report

LEI's overall recommendation related to avoided energy cost calculations and resulting rate was that DESC's proposed PR-1 and Standard Offer non-solar QF energy rates be adopted. (LEI Corrected Report, p. 74). LEI viewed the price outlook used by DESC as within a reasonable range of potential outcomes and DESC's pricing periods for standard offer rates as sufficient for purposes of this proceeding. *Id.* LEI recommended a single technology-neutral energy rate (i.e., DESC's proposed non-solar QF energy rates) be used in place of separate rates specific to standalone solar QF's. *Id.*

LEI analyzed avoided energy cost using its proprietary electricity marking dispatch model, known as POOLmod. *Id.* p. 27. LEI's analysis focuses on determining whether the avoided energy rates proposed by DESC fall within a "zone of reasonableness." *Id.* LEI found that the rates did. *Id.*

LEI, however, disagrees with the inclusion of separate rates for solar QFs (on both the energy and capacity side), viewing a technology-neutral approach regardless of resource type as

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more appropriate. *Id.* LEI reasoned avoided cost pricing calculations should be based on utility costs, rather than the nature of the technology receiving the rate, and whether or not a QF is flexible is not a factor in determining the utility's avoided costs in a particular hour. *Id.* p. 48. LEI views costs of integration as already addressed through the Variable Integration Charge ("VIC"). *Id.* LEI concluded that providing all resources with the same set of price signals provides more effective price signals as developers design their projects. *Id.*

Commission Finding

The Commission finds that DESC's proposed non-solar Standard Offer avoided energy rates are reasonable, accurate, and consistent with the requirements of Act 62 and other applicable law. Witness Horii as well as LEI testified to the reasonableness of these rates. Further, the Commission agrees with LEI's assessment that the natural gas price outlook used by DESC is reasonable. (LEI Corrected Report, p. 43).

The Commission also concludes that DESC's proposed non-solar PR-1 avoided energy rates, as modified to incorporate ORS Witness Horii's recommended modifications to one of the TOU periods, are reasonable, accurate, and consistent with the requirements of Act 62 and other applicable law. The Commission adopts the PR-1 avoided energy rates as set forth in Table 1 of Witness Horii's direct Testimony. (Horii Revised Direct p. 20, Table 1).

Finally, the Commission concludes DESC's proposed solar PR-1 and Standard Offer avoided energy rates are reasonable, accurate, and consistent with the requirements of Act 62 and other applicable law. Use of a single solar-specific energy credit for the PR-1 solar energy credit and the Standard Offer solar energy credit solves the TOU overcompensation because it specifically estimates the annual value of solar generation through the DRR process and divides that value by the annual solar output, thereby eliminating the averaging problem inherent in the

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TOU credits. (Horii Revised Direct p. 14, l. 8 – p. 15, l. 16). Consequently, the use of a solar-specific rate results in rates that are, overall, more accurate.

2. Avoided Capacity Rates

DESC Position

Capacity costs are the costs associated with providing the capability to deliver energy and consist primarily of the capital costs of facilities. (Neely Direct p. 5). As with avoided energy, DESC used the DRR methodology to calculate its avoided capacity costs. In calculating avoided capacity costs, for the base case, the Company calculates the incremental capital investment related revenue required to support its resource plan, either the Integrated Resource Plan or another resource plan if more appropriate. *Id.* p. 7. For the change case, the Company analyzes the estimated impact that a purchase from a 100 MW facility would have on the resource plan. *Id.* The avoided capacity cost is the difference between the incremental capacity costs in the base case and the change case. *Id.*

DESC proposes calculating the avoided capacity cost for solar QFs subject to the Standard Offer Rate and Rate PR-1 using a 5% Effective Load Carrying Capacity ("ELCC") rate. (Neely Direct p. 10). The 5% ELCC rate is different from the 11.8% ELCC described in Order No. 2020-244 in DESC's last avoided cost proceeding because the 11.8% was calculated assuming only 500 MW of existing solar generation on the system. *Id.* The updated calculation includes all 973 MW of existing solar power purchase agreements ("PPAs") that had been signed at the time of the calculation. *Id.* The ELCC of incremental solar decreases as more solar is added to the system as expected for additional and similar resources. *Id.*

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In rebuttal, DESC disagreed with the recommendation ORS made that 66 MW should be used as the assumed capacity change in the calculation of avoided capacity. Neely Rebuttal, p. 3. DESC witness Neely argued:

> Using a capacity change of 100 MW is consistent with the Company's calculation of avoided energy costs. Moreover, the MW change should be reflective of the MW that the Company could expect that it would be required to purchase from QFs over the next two years, and it is reasonable to expect that several hundred MW of QFs will be built in the Company's service territory over the next two years. Finally, PURPA specifically provides that a utility may use a capacity change of up to 100 MW to calculate avoided costs.

(Neely Rebuttal p. 3). DESC agreed with ORS's recommendation that 2022 should be used as the base year for the avoided capacity calculation and accepted that proposal. *Id.* DESC Witness Rooks sponsored tariffs attached to his rebuttal reflecting this change. *Id.* Accepting this change increased the avoided capacity cost for non-solar QF's that qualify for the Standard Offer and Rate PR-1, under DESC's calculations, to $58.81 per kW-year. *Id.* For solar QF's that qualify for the Standard Offer and Rate PR-1, the avoided capacity cost increased to $2.9405 per kW-year. *Id.* p. 4.

DESC disagreed with the recommendations made by intervenor witnesses regarding avoided capacity costs.

After rebuttal, the avoided capacity rates DESC proposed were as follows:[10]

Rate	**Avoided Capacity Rates**
Standard Offer and Rate PR-1 Solar QF's *All hours*	$0.00140 per kWh
Standard Offer Rate and Rate PR-1 Non-Solar QF's *Dec thru Feb, 6:00 am to 9:00 am*	$0.21781 per kWh

[10] Corrected Revised Exhibit No. __(Corrected Revised AWR-1); Corrected Revised Exhibit No. __(Corrected Revised AWR-2); Corrected Revised Exhibit No. __(Corrected Revised AWR-5); and Corrected Revised Exhibit No. __(Corrected Revised AWR-6).

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SACE/CCL Position

SACE/CCL Witness Sercy raised several concerns regarding DESC's proposed avoided capacity rates. He argued QF's "should be compensated in such a way that allows for a level of unavailability that is reasonably comparable to the level of unavailability of utility-owned resources." (Sercy Direct pp. 18-19). He asserted a "performance adjustment factor" ("PAF") within the avoided capacity rate calculations would accomplish this. *Id.* Sercy further noted DESC's proposed tariff for non-solar QFs requires them to be available and dispatchable in all capacity payment hours to receive any capacity payment. *Id.* pp. 19-20. Sercy asserted that "QFs should be paid based on their availability during the capacity payment hours, and if they are available for part of those hours, they should be paid proportionally." *Id.* p. 20. In addition, Sercy disagreed with the capital cost assumptions DESC utilized for aeroderivative combustion turbine technology ("aero-CT technology") and recommended the EIA report on Capital Cost and Performance Characteristics be used. *Id.* p. 20.

Regarding DESC's solar specific avoided capacity calculation, Sercy indicated concerns about DESC's application of the ELCC methodology, although he "broadly" agreed an ELCC approach is reasonable and viewed "such an approach as an improvement on DESC's previous approach to solar accreditation." *Id.* pp. 22-23. Sercy ultimately concluded that "DESC's 2021 ELCC analysis cannot be fully evaluated due to use of opaque SAS code, but based on the elements that can be assessed, it does not clear the bar of further advancing the rigor and accuracy of this important component of avoided cost calculations." *Id.* p. 27.

Sercy recommended a technology neutral capacity rate for which solar generation would be eligible and under which not all capacity value would be allocated to a three-hour period during the winter season. *Id.* pp. 27-28. Instead, he recommended a winter allocation of 52% and a

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summer allocation of 48% and identifying particular hours during the winter and summer months where much of the top 1% net loads occur. *Id.* p. 29-30. Applying this approach, SACE/CCL's proposed revised technology neutral avoided capacity rates are:

Time Period	Avoided Capacity Rates
January, February 6 am to 9 am	$0.18535 per kWh
June, July, August 2 pm to 8 pm	$0.05522 per kWh

Id. p. 30.

<u>ORS Position</u>

ORS Witness Horii testified the DRR methodology used by DESC is one of the generally accepted methods for calculating PURPA avoided costs and is used throughout the United States. (Horii Revised Direct p. 21). It also is the same methodology used by DESC and approved by the Commission in DESC's last avoided cost proceeding. *Id.*

Witness Horii generally agrees with DESC's methodology and assumptions but recommends two corrections to prevent underestimation of the value of generation capacity. *Id.* p. 21. The first correction is to use 66 MW as the assumed capacity change used in the Change Case so that it is the same as the assumed size of a new generating unit used by DESC in the analysis. *Id.* DESC assumes a 100 MW capacity change in their change case yet models meeting that 100 MW change with 66 MW generators. *Id.* The mismatch in generator size biases the avoided capacity cost downward. *Id.* Eliminating the mismatch by using 66 MW for the capacity change and the generator sizes increases avoided capacity cost by 17%. *Id.*

In DESC's previous avoided cost proceeding, the Commission accepted ORS's recommendation to ensure the generation change is consistent with the new generator size. *Id.* p. 22. In Docket No. 2019-184-E, DESC used a 100 MW generation change in the Change Case and

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used a 93 MW new generator size. *Id.* The Commission adopted ORS's recommendation to set the Change Case capacity change at the same size as the modeled new generation (Order No. 2019-847, pp. 24-25). *Id.* The Company did not request reconsideration or appeal Commission Order No. 2019-847. *Id.* In Docket No. 2019-184-E, Witness Horii noted that because of the unevenness of the size of combustion turbine ("CT") additions, avoided capacity costs could easily be manipulated up or down through mismatches in capacity changes and CT sizes. *Id.* For example, the avoided capacity factor could be increased by almost a factor of 18 (from $0.24725/kWh to $4.3925/kWh in Docket No. 2019-184-E) by using a 15 MW capacity change with a 93 MW CT plant size. *Id.* To avoid such manipulations to the avoided capacity factor, the DRR method should match the capacity change for the Change Case with the size of the CT additions. *Id.* ORS recommends in this docket to use a 66 MW capacity change to be consistent with DESC's modeled new CT generator. *Id.* Alternately, one could use a CT plant with hypothetical 100 MW capacity with a hypothetical 100 MW Change Case, but in either scenario the Change Case capacity reduction should be the same size as the CT plant. *Id.*

Witness Horii's second recommended correction is that DESC should use 2022 as the reference year for the avoided cost calculations. *Id.* p. 21. DESC's calculations rely upon 2020 as the reference year, which results in an 18% underestimation of the avoided capacity cost. *Id.* pp. 21-22.

The DRR method calculates the avoided cost of capacity based on the difference in the present values of the capacity-related revenue requirement of the base case minus the change case. *Id.* p. 23. The present value calculations are used to convert future cash flows to an equivalent value in a reference year. *Id.* DESC used a reference year of 2020 for the DRR calculations. *Id.* However, a more appropriate year is 2022 because this docket is determining avoided capacity values for 2022. *Id.* The choice of the reference year is impactful because use of a reference year other than 2022 will arbitrarily decrease or increase the DRR avoided capacity cost result. *Id.* For example, using a reference year of 2010 would reduce the avoided capacity cost by almost 63% relative to a 2022 reference year, while using a reference year of 2030 would increase the avoided capacity cost by over 93%. *Id.* Since this docket is setting avoided capacity costs for use in 2022 tariffs, ORS recommends that 2022 be used for the reference year of the present value calculations, and thereby match the avoided capacity costs with when the associated tariffs will be effective. *Id.*

DESC agreed with ORS's recommendation that 2022 should be used as the reference year for the avoided capacity calculation and accepted that proposal. Neely Rebuttal, p. 3. DESC Witness Rooks sponsored tariffs attached to his rebuttal reflecting this change. *Id.* DESC disagreed with ORS's recommendation to use 66 MW as the assumed capacity change in the Change Case.

In response to DESC's argument that a 100 MW change is consistent with the calculation of avoided energy costs, Witness Horii testified: (1) avoided energy and capacity costs are based on completely independent models and one model looks at short term operating costs and the other model looks at long-run capital costs for plant additions; (2) the avoided energy costs for solar do not use a 100 MW change for all hours, but instead use a solar profile with MW impacts that vary hourly; and (3) he is unaware of any PURPA requirement that the same MW change be used for each model. (Horii Surrebuttal pp. 5-6). In response to DESC's argument that the MW change should be reflective of the number of QF's expected over the next two years, Witness Horii testified that while 100 MW is closer to the several hundred MWs of QFs projected over the next two years, 100 MW is so far away from several hundred MWs that it would be a stretch to deem it reflective of what is expected over the next two years and not a justification for departing the ruling in Order No. 2019-847. *Id.* p. 6. In response to DESC's assertion that PURPA provides that

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a utility can use up to 100 MW to calculate avoided costs, Witness Horii testified PURPA allows an increment up to 100 MWs but does not mandate that only 100 MWs can or should be used. *Id.* 66 MWs equally complies with the PURPA specification. *Id.*

The two corrections Witness Horii recommends increase avoided capacity rates by 37.5%. (Horii Revised Direct p. 24). Witness Horii's recommended avoided capacity rates are:

Rate	**Avoided Capacity Rates**
Standard Offer and Rate PR-1 Solar QF's *All hours*	$0.00164 per kWh
Standard Offer Rate and Rate PR-1 Non-Solar QF's *Dec thru Feb, 6:00 am to 9:00 am*	$0.25413 per kWh

Id. p. 24, Table 2.

The solar QF $/kWh credit is lower than the non-solar QF $/kWh credit for two reasons. *Id.* First, the non-solar QFs are only credited for output from 6:00 am to 9:00 am in three winter months. *Id.* In contrast, the solar QFs receive a capacity credit for all of their output, regardless of the time of day or the season. *Id.* Second, the credit provided to solar QFs is reduced for the fact that the generation capacity reduction per nameplate kW of solar generation is decreasing with higher levels of solar penetration on the DESC system. *Id.* In Docket No. 2019-184-E, 11% of solar nameplate capacity was counted toward generation capacity reductions based on ELCC studies. *Id.* pp. 24-25. In this proceeding, DESC estimates that the ELCC-based value is now only 5% of nameplate capacity. *Id.* p. 25. Witness Horii agrees with the use of ELCC analyses to determine capacity contributions from intermittent resources. *Id.*

LEI Report

LEI agreed with ORS's recommendation to use 66 MW as the assumed capacity change in the Change Case and that the size of the capacity change and the size of the generator should be

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set equal to one another to correct the mismatch in DESC's approach. (LEI Corrected Report p. 31). LEI agreed with SACE Witness Sercy that EIA's cost assumptions for an aero-CT addition should be used for avoided capacity cost calculations and that a PAF of 1.05 should be included in calculating avoided capacity costs. *Id.* pp. 31-35. The 1.05 is based on the PAF included in Duke's 2019 avoided cost proceeding. *Id.* On the issue of technology neutrality, LEI recommends the use of a single avoided capacity rate. *Id.* p. 36. On the issue of seasonal allocation, LEI indicates that based upon its review, it appears that, as DESC notes, winter reserve margin requirements are driving differentiation in the avoided cost change case. *Id.* Nevertheless, LEI indicated it is possible DESC's capacity allocation window may be overly narrow seasonally and recommended that going forward DESC assess the value of summer capacity and provide more clarity and data substantiation on why it believes summer capacity has little to no value should it reach that conclusion. *Id.* p. 37. The overall impact of LEI's recommended changes to avoided capacity is:

Impact of change to:	**Capacity Cost ($/kW – year)**	**% Impact**
No change – avoided capacity cost proposed by DESC	$58.81	
Matching capacity change and generating unit size	$68.61	16.7%
Using EIA-based cost assumptions for aero-CT	$66.98	13.9%
Inclusion of 1.05 PAF	$61.75	5.0%
Impact of all three changes	**$81.99**	39.4%

Id. p. 37.

__Commission Finding__

The Commission adopts the avoided capacity rates recommended by ORS Witness Horii and concludes they are reasonable, accurate, and consistent with the requirements of Act 62 and other applicable law. DESC agreed with and incorporated into its proposed rates in surrebuttal

Witness Horii's recommendation to use 2022 as the reference year. The Commission also agrees with Witness Horii recommended correction to use 66 MW as the assumed capacity change used in the Change Case so that it is the same as the assumed size of a new generating unit used by DESC in the analysis. LEI agreed with this recommendation as well. In DESC's previous avoided cost proceeding, the Commission accepted ORS's recommendation to ensure the generation change is consistent with the new generator size. DESC did not seek reconsideration of or appeal that decision. The Commission again finds Witness Horii's analysis of this issue persuasive.

The Commissions declines to adopt the PAF and aero-CT capital cost assumption change proposed by SACE/CCL. The Commission also declines to approve the seasonal allocation changes proposed by SACE/CCL and the recommendation that solar generators be eligible for the non-solar avoided capacity rates. Although LEI agreed with Witness Sercy's recommendations regarding the PAF, aero-CT capital cost assumption change, and eligibility of solar for the non-solar rates, LEI did not recommend changing the seasonal allocation proposed by DESC.

3. Variable Integration Charge ("VIC")

DESC Position

DESC retained Guidehouse to conduct a Variable Integration Cost Study. (David Corrected Direct p. 4). Witness David is employed with Guidehouse and testified regarding the study. Guidehouse's findings and conclusions are as follows:

- Solar generation is an intermittent resource whose production depends on factors inherently outside of DESC's control such as prevailing weather conditions. As a result, it is possible for there to be significant variance between the amount of generation that is expected from solar versus actual solar output.

- The potential for solar forecast error introduces a measure of uncertainty to the generation needed from the rest of the system that increases as solar penetration increases.

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- In order to account for this uncertainty and ensure that load and current Operating Reserve obligations are met, increased solar penetration will require DESC to maintain additional Operating Reserves beyond current requirements.

- Barring any other changes to the system, increasing the amount of Operating Reserves that DESC holds will change the way that the Company dispatches the system. Flexible generators, such as Combined Cycles ("CCs"), will have to frequently operate at levels below their maximum capability, which is less efficient and thus more expensive per MWh, in order to provide Operating Reserves. The energy those flexible assets would otherwise provide will instead come from less efficient and more expensive generators such as coal or gas-fired Steam Turbines or increased net imports. The end result is an overall increase in system operating costs.

- DESC currently has 340 MW of solar capacity under contract without a variable integration charge clause included in their PPAs. There is roughly 633 MW of solar capacity, bringing the total installed solar capacity up to 973 MW, that does have variable integration charge clauses in their PPAs; the levelized cost of maintaining additional Operating Reserves for that tranche is $1.80/MWh.

- As solar penetration increases, and thus the Operating Reserve requirement increases, the levelized cost of maintaining additional Operating Reserves also increases due to the need for DESC to operate the system in an increasingly less efficient manner. The levelized cost of maintaining additional Operating Reserves for the next 100 MW tranche of solar beyond what is currently contracted, bringing the total solar penetration to 1,073 MW, is $3.43/MWh; the levelized cost of maintaining additional Operating Reserves for a third tranche that includes an additional 300 MW of solar capacity, bringing the total installed solar capacity up to 1,373 MW, is $4.64/MWh.

- Building additional resources such as quick start Combustion Turbines ("CTs"), battery storage, or CCs to provide additional Operating Reserves will not reduce costs to DESC as the capital investment required for these facilities at current technology costs is far greater than the increase in system costs calculated in the Study.

- It is possible for solar projects to be added to the system that can mitigate their own potential forecast error by installing co-located battery storage or changing operations to be more flexible. Solar assets that do so will not require increasing Operating Reserve requirements and thus should not be subject to a variable integration charge. The conditions for being able to self-mitigate forecast error need to be defined in detail but broadly require that:

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- DESC can control the generation from the project so that it can curtail production if the solar forecast uncertainty requires withholding cost-effective generation which increases system dispatch costs.

- The project can make up the shortfall in generation by replacing all of the scheduled energy when called upon by DESC.

Id. pp. 13-16.

Guidehouse calculated the VIC to be \$1.80/MWh for the first tranche of solar, \$3.43 for the next 100 MW of solar (Tranche 2), and \$4.64/MWh for a third tranche of solar comprising 300 MW of capacity. *Id.* pp. 25-26. Tranche 1 includes all the interconnected solar generation with PPAs that do not include any VIC clauses (340 MW) and all of the interconnected solar generation with PPAs that do include a VIC clause (633 MW incremental). *Id.* p. 7. DESC is not proposing to adopt a VIC of \$4.64/MWh for generation in excess of 1,073 MW and proposes to apply the VIC of \$3.43/MWh for Tranche 2 to all solar generation in excess of 973 MW under PR-1 Solar, PR-Standard Offer, and PR-Form PPA solar contracts. Bell Direct p. 28.

In rebuttal to ORS Witness Horii's proposal to keep the VIC at the \$0.96/MWh set in DESC's prior avoided cost proceeding subject to true up in accordance with Order No. 2020-244, DESC testified it does not agree with Witness Horii's proposal because it has clearly proved the proper amount for a VIC. (Kassis Rebuttal pp. 6-7). However, DESC further testified that "[n]evertheless, DESC understands there is a separate integration-study docket ongoing before the Commission and is therefore willing to accept Witness Horii's proposal that the VIC remain at \$0.96/MWh on an interim basis, so long as the VIC remains subject to a future true up." *Id.* p. 7.

<u>CCEBA Position</u>

Witness Burgess testified on behalf of CCEBA and presented various recommendations regarding DESC's proposed VIC. Burgess asserted the Commission should reject DESC's proposal to increase the VIC for facilities in both Tranche 1 and Tranche 2 (and above) since such an increase is unsupported by the evidence DESC presented. (Burgess Direct p. 3). He also recommended that a final fixed VIC should be adopted in this proceeding, and any changes to the VIC in subsequent proceedings should not apply to PPAs subject to the final fixed VIC adopted in this proceeding. *Id.* He further argued that given the lack of incremental operating reserve needs beyond historical levels, a VIC charge of $0/MWh is appropriate, which he asserts is consistent with the lack of any observed reserve shortfall in DESC's analysis of Tranche 1 (without reserves) when certain errors are corrected. *Id.* If the Commission feels compelled to adopt a non-zero VIC in this proceeding, Burgess recommends the Commission consider values of $0.28/MWh or less for Tranche 1 and $0.71/MWh or less for Tranche 2 (and above), which correct for some of the deficiencies in DESC's VIC analysis. *Id.* Burgess argues establishing a final fixed VIC at these levels is more reasonable than what DESC has proposed and would provide cost transparency and certainty to QF developers, even if these values do not address all of the deficiencies in DESC's analysis. *Id.* In addition, Burgess testified any future integration cost studies – including studies for what DESC calls "Tranche 3" - should follow the stakeholder process outlined in S.C. Code Ann. § 58-37-60(A). *Id.*

Witness Burgess proposed another alternative in his Supplemental Surrebuttal Testimony:

> Alternatively, at a minimum the Commission should apply hourly weighting to the Guidehouse model results as the basis for a *fixed* VIC charge, to be updated on a prospective basis for PPAs executed after an independent analysis is conducted. Applying hourly weighting to Tranche 1, using the Guidehouse modeling, results in a fixed VIC charge of $0.73/MWh. The $0.73/MWh fixed VIC charge should also be applied to any PPAs executed prior to an independent analysis. To the extent that this Commission maintains an interim VIC rather than fixing the VIC at one of my recommended levels, the interim VIC should be set at a maximum level of $0.73/MWh.

(Burgess Suppl. Surrebuttal p. 12).

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ORS Position

ORS Witness Horii testified the efficient integration of renewable energy generation creates additional costs for utilities. (Horii Revised Direct p. 7). E3, the consulting firm with which Witness Horii is employed, conducted extensive work in California and Hawaii where renewable generation comprises a large portion of the utility's generation resources. *Id.* In its modeling, E3 observed that increasing amounts of solar and wind generation can require additional ramping capability and reserves to meet both the intermittent nature of solar and wind generation and the diurnal ramping characteristics of solar generation. *Id.* The cost impact may include higher start-up costs, fuel costs, and operating and maintenance ("O&M") costs resulting from resources operating at levels below their maximum efficiency to allow upward headroom to ramp up output. *Id.* Costs may also increase for additional generation plant required to provide additional flexible capacity. *Id.*

While Witness Horii found the overall concepts of the calculation methodology used in the Guidehouse Variable Integration Study to be reasonable, he does not recommend adopting the DESC's proposed VIC charges at this time. *Id.* p. 8. DESC first proposed a version of the calculation methodology in Docket No. 2019-184-E. *Id.* In that proceeding, ORS through Witness Horii's testimony, and other parties raised concerns with the analysis and assumptions used by DESC and Guidehouse (formerly known as Navigant). *Id.* Witness Horii testified that Guidehouse appears to have addressed some of the concerns raised by ORS and the other parties in the new analysis including the reduction or elimination of the need for additional operating reserves in hours where solar is expected to be generating at low or zero levels. *Id.* However, Witness Horii concludes from his review of the Company's calculation methodology that Guidehouse has not

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justified their forecast of incremental operating reserves needed to accommodate solar forecast uncertainty. *Id.*

Witness Horii further explained solar forecast uncertainty is the primary driver of the Company's need for increased operating reserves. *Id.* The risk of solar output being lower than scheduled or forecasted levels necessitates having flexible generation available to keep the system in balance. *Id.* Generally, the more flexible resources that the Company needs to be spinning or available to respond to drops in solar output, the higher the cost of the generation. *Id.* pp. 8-9. The Company's solar forecast study models forecast uncertainty of solar output based on the differences between 4-hour ahead schedules and actual solar output. *Id.* p. 9. The study recognizes that ideally 1-hour ahead schedules would be used, but the data for 1-hour ahead was not available (David Corrected Direct Testimony p. 9). The ability of the Company to increase its forecast accuracy depends upon the specific forecasting method used, and a 2015 study suggests that solar forecast errors could be reduced by about half if 1-hour ahead schedules are used. *Id.* DESC attempted to correct for the excessive solar forecast error in the 4-hour ahead forecasts by excluding the 10% largest violations in the determination of the need for incremental operating reserves. *Id.* However, Witness Horii testified neither the Company's study nor the DESC testimonies and data responses provide sufficient information to support that excluding the top 10% violations results in estimates of incremental operating reserves which closely match current or future DESC operations. *Id.*

ORS's recommendation is that the VIC remain at the $0.96/MWh level set in DESC's last avoided cost proceeding subject to a future true up as contemplated in Order No. 2020-244. *Id.* Through the extension of the true-up provision, any deviations from the actual integration costs may be addressed. *Id.* p. 10. In response to Commissioner questions, Witness Horii testified it

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would take nine months to one year to conduct a new VIC study with stakeholder involvement and review. He further testified in response to Commissioner questions that if the Commission is looking to establish a set value based on the numbers proposed in this proceeding and not undertake a new study, he recommends DESC's proposed $1.80/MWh VIC for tranche 1 be adopted. This recommendation is based on Duke Energy Progress, LLC's current VIC which is $2.39/MWh and which has a similar system to DESC's system. The $1.80 also is fairly close, although lower than the $2.39 Witness Horii proposed in DESC's last avoided cost proceeding.

LEI

Regarding the VIC, LEI concludes the "best approach is to continue with the VIC at the current interim level of $0.96/MWh subject to true up or down based on the results of a comprehensive independent study." (LEI Corrected Report p. 56). Should the Commission determine a fixed VIC must be set as part of this proceeding, LEI concurs with Witness Horii that "DESC's proposed VIC for Tranche 1 of $1.80/MWh may be a reasonable value for all newly contracted resources over the next two years and existing contracts with a true up provision." *Id.* LEI reached this conclusion for the following reasons:

- it was calculated based on the amount of solar already on DESC's system;
- it is consistent with the levels established in the Duke 2019 avoided cost proceeding; and
- it is within the range of what LEI has observed through a survey of solar integration charges and ancillary services costs across regions – specifically, while LEI has observed that ancillary services costs in organized markets tend to be lower (and are not charged to intermittent resources but to customers), the proposed Tranche 1 VIC of $1.80/MWh is generally in line with the values presented in other solar integration studies conducted for utilities in the Southeast.

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Id. If the Commission determines a fixed rate for the VIC must be established, LEI also recommends the Commission assure that "a thorough, independent VIC study with appropriate stakeholder involvement be performed prior to the next avoided cost review." *Id.*

Commission Finding

The Commission adopts the recommendation of Witness Horii, with which LEI agreed, to keep the VIC at the $0.96/MWh level set in DESC's last avoided cost proceeding subject to a future true up as contemplated in Order No. 2020-244. DESC also indicated it was willing to accept Witness Horii's proposal. The Commission carefully considered the various alternatives presented by Witness Burgess on behalf of CCEBA. However, the Commission does not find any of the alternatives to be just and reasonable or that they sufficiently minimize risk placed on the using and consuming public of a VIC that is set too low, as required by section 58-41-20(A).

4. Transparency

"Each electrical utility's avoided cost filing must be reasonably transparent so that underlying assumptions, data, and results can be independently reviewed and verified by the parties and the commission." S.C. Code Ann. § 58-41-20(J). ORS found DESC's filings in this docket to be reasonably transparent for its review and analysis. (Horii Revised Direct p. 4). Further, ORS Witness Horii testified DESC provided information in its filings and data responses that allowed him to assess the reasonableness of its proposals, to make important improvements to the assumptions, and follow those changes through the models so that he could derive ORS's recommended tariffs and PPA rates. *Id.*

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ORDER

IT IS THEREFORE ORDERED that based on the above stated findings and conclusions,

1) The avoided energy rate rates for PR-1 solar; Standard Offer solar; and Standard Offer non-solar proposed by DESC as detailed above are hereby approved and adopted and Ordered to be implemented by DESC;
2) The avoided energy rates for PR-1 non-solar proposed by DESC, as modified by ORS Witness Horii, as detailed above are hereby approved and adopted and Ordered to be implemented by DESC;
3) The avoided capacity rates recommended by ORS Witness Horii, as detailed in the above findings, are Ordered and approved as reflecting a fair and unbiased valuation consistent with industry standard assumptions; and
4) The VIC shall remain at the interim value of $0.96/MWh set in Docket No. 2019-184-E, subject to a future true up as contemplated in Order No. 2020-244.

In accordance with the above stated Findings and Conclusions, and based on the greater weight of the evidence, we find as a matter of law that our rulings in this matter are in accordance with the stated intent of Act 62 and result in a just and reasonable outcome for the Companies' customers while promoting South Carolina's policy of encouraging renewable energy.

BY ORDER OF THE COMMISSION:

Justin Williams, Chairman

Florence P. Belser, Vice-Chairman

(SEAL)